

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property  
Organization  
International Bureau



10/506664



(43) International Publication Date  
12 September 2003 (12.09.2003)

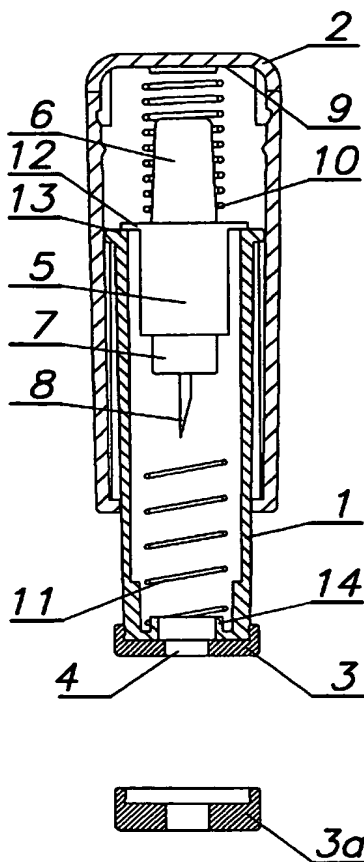
PCT

(10) International Publication Number  
WO 2003/073936 A3

- (51) International Patent Classification<sup>7</sup>: A61B 5/15
- (21) International Application Number: PCT/PL2003/000019
- (22) International Filing Date: 5 March 2003 (05.03.2003)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:  
P.352649 6 March 2002 (06.03.2002) PL  
P.352660 7 March 2002 (07.03.2002) PL  
P.352962 22 March 2002 (22.03.2002) PL  
P.355740 28 August 2002 (28.08.2002) PL
- (71) Applicant (for all designated States except US): "HTL STREFA" SP. Z O.O. [PL/PL]; ul. Adamówek 7, PL-95-035 Ozorków (PL).
- (72) Inventors; and  
(75) Inventors/Applicants (for US only): CZERNECKI, Andrzej [PL/PL]; ul. Zakopianska 10, PL-03-934 Warszawa (PL). WYSZOGRODZKI, Wojciech [PL/PL]; ul. Os-tródzka 56 X, PL-03-289 Warszawa (PL). SARNA, Wo-jciech [PL/PL]; ul. Walbrzyska 19 m. 32, PL-02-739 Warszawa (PL).
- (74) Agent: SŁOMCZYNSKA, Elżbieta et al; POLSERVICE Sp.z.o.o, P.O.Box 335, 00-950 Warszawa, Poland (PL).
- (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

[Continued on next page]

(54) Title: A DEVICE FOR PUNCTURING PATIENT'S SKIN



(57) Abstract: According to the present invention, the device for puncturing patient's skin comprises a sleeve, a push element mounted on one end of the sleeve, a piston with puncturing tip slidably mounted inside the sleeve, and a drive spring positioned between the face of the push element and the piston, where at the other end of the sleeve a cap is mounted, with thickness determines the depth of skin piercing by the puncturing tip passing through the opening in the cap. According to a variety of the present invention, at the other end of the sleeve a indicating-adjusting member comprising an opening for the puncturing tip is mounted turnably with respect to the axis of the sleeve, wherein the indicating-adjusting member has inwardly directed stair shaped limiting members, which are hit in operation by the fin of the piston, and has at least one indicator of the pre-set puncturing depth located in a circumferential groove in the lower part of the sleeve with external cut-outs. Preferably the external cut-outs have different widths. According to yet another variety of the present invention, the push element comprises a turnably mounted therein puncturing force adjusting member, which comprises inwardly directed stair shaped members pressing the push rod of the piston in operation. An advantage of the solution according to the present invention is a fact that the invention enables pre-setting of depth and/or force of puncturing of patient's skin for sampling patient's blood for the sake of diagnostic test.

WO 2003/073936 A3



(84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

— as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii)) for all designations

**Published:**

— with international search report

(88) Date of publication of the international search report:  
18 March 2004

**Declarations under Rule 4.17:**

— as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for all designations

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

# INTERNATIONAL SEARCH REPORT

International Application No  
PCT/PL 03/00019

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 A61B5/15

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 A61B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0 783 868 A (APLS CO LTD) 16 July 1997 (1997-07-16) column 1, line 50 - column 2, line 2 column 14, line 26 - line 37 column 15, line 44 - column 18, line 49; claims 1,3,7; figures 1-4 -----	1,2
X	US 4 653 513 A (DOMBROWSKI MITCHELL P) 31 March 1987 (1987-03-31) column 5, line 66 - column 6, line 28; figure 3	1
X	DD 242 962 A (BEZIRKSKRANKENHAUS KARL MARX S) 18 February 1987 (1987-02-18) page 2, line 28 - line 35 page 3, line 1 - line 35; figure 1 ----- -/--	1

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

\* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

14 July 2003

Date of mailing of the international search report

23.10.03

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2  
NL - 2280 HV Rijswijk  
Tel (+31-70) 340-2040, Tx. 31 651 epo nl,  
Fax: (+31-70) 340-3016

Authorized officer

Rick, K.

# INTERNATIONAL SEARCH REPORT

International Application No  
PCT/PL 03/00019

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 99 63897 A (STAT MEDICAL DEVICES INC) 16 December 1999 (1999-12-16) page 3, line 16 - line 30 page 7, line 6 - line 18 page 9, line 16 - page 10, line 7 page 12, line 20 - page 13, line 31; figures 3A-D	2
X	----- EP 1 142 534 A (PZ HTL S A) 10 October 2001 (2001-10-10) cited in the application	3,4
A	column 2, line 15 - column 2, line 44; claims 1,3,4,8,10; figures 1-4 -----	5,6

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/PL 03/00019

## Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:  
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1-6

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-6

Blood sampling device with adjustable puncturing depth.  
---

2. claims: 7,8

Blood sampling device with adjustable puncturing force.  
---

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No  
PCT/PL 03/00019

Patent document cited in search report		Publication date		Patent family member(s)	Publication date
EP 0783868	A	16-07-1997	DE	69627288 D1	15-05-2003
			EP	0783868 A1	16-07-1997
			US	5730753 A	24-03-1998
			CA	2201317 A1	13-02-1997
			WO	9704707 A1	13-02-1997
-----					
US 4653513	A	31-03-1987	AU	575257 B2	21-07-1988
			AU	6069686 A	19-02-1987
			EP	0212906 A2	04-03-1987
			JP	62038140 A	19-02-1987
-----					
DD 242962	A	18-02-1987	DD	242962 A1	18-02-1987
-----					
WO 9963897	A	16-12-1999	US	6346114 B1	12-02-2002
			WO	9963897 A1	16-12-1999
			US	2001027327 A1	04-10-2001
-----					
EP 1142534	A	10-10-2001	PL	339530 A1	08-10-2001
			EP	1142534 A1	10-10-2001
			JP	2001353138 A	25-12-2001
			US	2001039387 A1	08-11-2001
-----					